

REMARKS/ARGUMENTS

Claims 1-38 are pending in the application. The Examiner has rejected claims 1-38. Applicant respectfully requests reconsideration of claims 1-38.

The Examiner has objected to the abstract of the disclosure as being longer than 150 words. Applicant has provided a replacement abstract. Applicant submits the replacement abstract does not introduce new matter. Applicant submits the replacement abstract obviates the objection to the abstract.

The Examiner has rejected claims 20-38 under 35 U.S.C. § 112, first paragraph, as allegedly claiming apparatus comprising a network element comprising a single means and therefore being regarded as being of undue breadth. Applicant respectfully disagrees.

Regarding claims 20-38, Applicant notes the present application, including claims 20-38, which remain in the same form in which they were originally filed, was examined and a first Office action was issued. Applicant notes that not only were claims 20-38 not determined to be of undue breadth during that examination or in that first Office action, but also specific rejections based on prior art were alleged with respect to those claims in that Office action. Accordingly, Applicant submits claims 20-38 remain in compliance with 35 U.S.C. § 112, first paragraph.

Moreover, Applicant submits claims 20-38 do not recite a "means." Thus, Applicant submits the Examiner's analysis under MPEP § 2164.08(a) is inapplicable to claims 20-38. In the Examiner's Response to Arguments, the Examiner made the following bald assertion: "Rejecting claims under 35 U.S.C. 112, first paragraph, requires a means recitation (i.e., structure, component), but not specifically the claim language 'means for' or 'step for.'" The Examiner states no basis for such assertion. Applicant can find no such "requirement" in, for example, MPEP § 706.03(c) "Rejections Under 35 U.S.C. 112, First Paragraph." Thus, Applicant submits the Examiner has not substantiated the rationale upon which the rejection is apparently based. Therefore, Applicant submits claims 20-38 are in condition for allowance.

The Examiner has rejected claims 4-16 and 23-36 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite to failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant respectfully disagrees.

Regarding claims 4-16 and 23-36, Applicant notes the present application, including claims 4-16 and 23-36, which remain in the same form in which they were originally filed, was examined and a first Office action was issued. Applicant notes that not only were claims 4-16 and 23-36 not determined to be indefinite during that examination or in that first Office action, but also specific rejections based on prior art were alleged with respect to those claims in that Office action. Accordingly, Applicant submits claims 4-16 and 23-36 remain in compliance with 35 U.S.C. § 112, second paragraph. Therefore, Applicant submits claims 4-16 and 23-36 are in condition for allowance.

Moreover, Applicant submits the Examiner mischaracterizes what claims 4-16 and 23-36 actually recite in bringing the rejection. While the Examiner states, "The claim language cites a method step and apparatus functionality of "applying interface groups," Applicant notes claims 4 and 23 recite "applying interface groups to determine when marking of control packets is to be done" and claims that depend therefrom also recite subject matter beyond what the Examiner alleges. Thus, Applicant submits the actual claim language is not indefinite for failing to particularly point out and distinctly claim patentable subject matter. Therefore, Applicant submits claims 4-16 and 23-36 are in condition for allowance.

In the Examiner's Response to Arguments, the Examiner does not explain how, under "compact prosecution," claims 4-16 and 23-36 were apparently understood by the Examiner to particularly point out and distinctly claim subject matter during initial examination and preparation of the first Office action, but now, without intervening amendment, those same claims allegedly are not so understood. Thus, Applicant submits claims 4-16 and 23-36 are in condition for allowance.

The Examiner has rejected claims 1, 2, 17, 20, 21 and 36 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1). Applicant respectfully disagrees.

Regarding claims 1 and 20, Applicant submits the cited portions of the cited references do not render obvious the subject matter of claims 1 and 20. Regarding claims 1 and 20, Applicant submits

the cited portions of the cited references do not render obvious the subject matter of claims 1 and 20. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "marking packets carrying the Layer-3 control information." While the Examiner cites "column 7, line 58-column 8, line 4)" of the McDysan reference as allegedly disclosing "a marker/policer 82 that marks a packet by setting bits in a DiffServ Type of Service (TOS) byte in an IP packet header," Applicant submits such teaching does not disclose "Layer-3 control information" or "marking packets carrying the Layer-3 control information." While the Examiner alleges "which is known by one of ordinary skill in the art to comprise Layer-3 control information, Applicant submits the Examiner cites no teaching in the prior art to support such assertion. Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 1 and 20.

As another example, Applicant submits the cited portions of the cited references do not disclose or suggest "encapsulating the packets at Layer-2." While the Examiner cites the Henderson et al. reference, alleging "Henderson discloses a MAC (i.e., Layer 2) header representing the outermost encapsulation of an IP packet (paragraph 0094)," Applicant submits such teaching does not disclose "encapsulating the packets at Layer-2," where the antecedent basis for "the packets" is "packets carrying the Layer-3 control information." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 1 and 20. Therefore, Applicant submits claims 1 and 20 are in condition for allowance.

Regarding claims 2 and 21, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 2 and 21. Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 2 and 21. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "marking the packets using a unique protocol identifier." While the Examiner states, "MyDysan discloses setting a DiffServ TOS byte in an IP packet header, as described with regards to Claim 1 above, therefore equivalent to Applicant's claimed functionality of marking the packets using a unique protocol identifier," Applicant submits such teaching fails to disclose or suggest "a unique protocol identifier." Also, Applicant submits the Examiner has not alleged any motivation to combine any purported teaching in the prior art as to "a unique protocol identifier." Even in the Examiner's Response to Arguments, the Examiner states, "However, given it broadest reasonable interpretation in view of the specification, a DiffServ TOS byte would be known to one of ordinary skill in the art to comprise a unique identifier in an

Internet Protocol (IP) network," but the Examiner still doesn't appear to allege any teaching as to "a unique protocol identifier." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 2 and 21. Therefore, Applicant submits claims 2 and 21 are in condition for allowance.

Regarding claims 17 and 36, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 17 and 36. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "encapsulating the packets according to control encapsulation." Applicant notes the Examiner acknowledges "McDysan does not expressly disclose encapsulating the packets according to control encapsulation." Moreover, Applicant notes the Examiner does not appear to allege any further teachings with respect to "control encapsulation" based on the Henderson et al. reference. Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 17 and 36. Therefore, Applicant submits claims 17 and 36 are in condition for allowance.

Regarding claims 3 and 22, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 3 and 22. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "marking the packets using a link-local MPLS label." While the Examiner cites "(paragraphs 0065 and 0066)" of the Nakamichi reference, Applicant notes "(paragraphs 0065 and 0066)" of the Nakamichi refer to "the opaque LSA." Applicant further notes paragraph [0050] of the Nakamichi reference states, "...an opaque LSA (Link State Advertisement) that is a peculiar LSA in OSPF (Open Shortest Path First) protocol is used." Applicant submits the Examiner does not allege motivation as to why one of ordinary skill in the art at the time the invention was made would purportedly combine of teaching as such a "peculiar LSA in OSPF" with other alleged teachings.

Furthermore, in the Examiner's Response to Arguments, the Examiner states, "Examiner notes that the Nakamichi reference is a translation of a Japanese document and the term 'peculiar' may have a different meaning than that interpreted by Applicant." However, Applicant submits the Examiner has not provided any evidence to establish what the meaning of the terms in the Nakamichi reference would have been to one of ordinary skill in the art at the time of the invention or that one of ordinary skill in the art would have had, at the time of the invention, the understanding of those terms asserted by the Examiner. While the Examiner states, "the passage cited by Applicant is not relied upon to

reject claims 3 and 22," Applicant submits the passage cited does exist in the cited reference and would have had bearing on how one of ordinary skill in the art would have understood the teachings of the cited reference. Accordingly, Applicant submits such the Examiner cannot simply ignore the extent to which the teachings of the Nakamichi reference teach away from the subject matter of claims 3 and 22. Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 3 and 22. Therefore, Applicant submits claims 3 and 22 are in condition for allowance.

The Examiner has rejected claims 4-12 and 23-31 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) as applied to claims 1 and 20 above, and further in view of Yu et al. (United States Patent Application Publication US 2004/0010583 A1). Applicant respectfully disagrees.

Regarding claims 4 and 23, Applicant submits the cited portions of the cited reference fail to render obvious the subject matter of claims 4 and 23. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to determine when marking of control packets is to be done." While the Examiner cites "(paragraph 0022)" and "(paragraph 0025)" of the Yu reference, Applicant submits the cited portion of the Yu reference teaches away from the subject matter of claims 4 and 23. Applicant notes "(paragraph 0022)" begins "An Interface Group is a group of interfaces selected by the network manager to collectively define when one or more network device should perform failover," which Applicant submits fails to disclose or suggest "applying interface groups to determine when marking of control packets is to be done." Applicant also notes "(paragraph 0025)" begins "The network device manager may assign a name to the interface group to enable the interface group to be referenced at a later time," which Applicant submits fails to disclose or suggest "applying interface groups to determine when marking of control packets is to be done." Therefore, Applicant submits claims 4 and 23 are in condition for allowance.

Regarding claims 5 and 24, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 5 and 24. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to packet communications within a particular interface group." While the Examiner cites "(Figure 1, interface group defined between interfaces 'a' and 'd' within network device A)" of the Yu reference, Applicant

submits "Figure 1" of the Yu reference fails to disclose "interface group defined between interfaces 'a' and 'd' within network device A," as alleged by the Examiner. Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to the subject matter of claims 5 and 24. Therefore, Applicant submits claims 5 and 24 are in condition for allowance.

Regarding claims 6 and 25, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 6 and 25. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to packet communications within a backbone interface group." While the Examiner cites "(Figure 4, static tunnel through Internet between network device A and network device B)," Applicant submits such alleged teaching does not teach or suggest, for example, "...within a backbone interface group" or even "...interface group." Therefore, Applicant submits claims 6 and 25 are in condition for allowance.

Regarding claims 7 and 26, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 7 and 26. As an example, Applicant submits the cited portions of the cited references fail to disclose or suggest "applying interface groups to packet communications within a customer-specific interface group." While the Examiner cites "(Figure 4, interface 'a' between network device A and HostPC)," Applicant submits such alleged teaching does not teach or suggest, for example, "...within a customer-specific interface group" or even "...interface group." Therefore, Applicant submits claims 7 and 26 are in condition for allowance.

Regarding claims 8 and 27, Applicant submits the cited portions of the cited references do not render obvious the subject matter of claims 8 and 27. As an example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications within a peer interface group." While the Examiner cites "(Figure 4, static tunnel between network device A and network device D)" of the Yu reference, Applicant submits such alleged teaching does not teach or suggest, for example, "...within a peer interface group" or even "...interface group." Therefore, Applicant submits claims 8 and 27 are in condition for allowance.

Regarding claims 9-12 and 28-31, Applicant submits the cited portions of the cited references do not render obvious the subject matter of claims 9-12 and 28-31. As an example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications between interface groups." As another example, Applicant submits the cited portions

of the cited references do not teach or suggest "applying interface groups to packet communications between backbone and customer-specific interface groups." As yet another example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications between customer-specific and peer interface groups." As a further example, Applicant submits the cited portions of the cited references do not teach or suggest "applying interface groups to packet communications between backbone and peer interface groups." Applicant notes the Examiner merely alleges teaching as to "(Figure 4, connections between peer, backbone, and customer networks at network device A)" of the Yu reference. However, Applicant submits claims 9-12 and 28-31 recite specific features, not merely "connections between peer, backbone, and customer networks." Thus, Applicant submits the Examiner has not alleged teachings as to the subject matter of claims 9-12 and 28-31. Therefore, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 9-12 and 28-31. Moreover, Applicant note the Examiner merely alleges teaching as to "networks" not as to "interface groups." Thus, Applicant submits the Examiner has not alleged teachings as to the subject matter of claims 9-12 and 28-31. Therefore, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 9-12 and 28-31. Accordingly, Applicant submits claims 9-12 and 28-31 are in condition for allowance.

The Examiner has rejected claims 13 and 32 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) and Yu et al. (United States Patent Application Publication US 2004/0010583 A1) as applied to claims 4 and 23 above, and further in view of Chuah et al. (United States Patent Application Publication US 2004/0054924 A1). Applicant respectfully disagrees.

Regarding claims 13 and 32, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 13 and 32. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "applying interface groups to communication of ICMP packets." While the Examiner cites "(paragraph 0062)" of the Chuah reference, Applicant submits "ICMP trace-backs" does not teach or suggest "applying interface groups to communication of ICMP packets." Moreover, Applicant submits the Chuah reference teaches away from the subject matter of claims 13 and 32, as Applicant notes "(paragraph 0062)" of the Chuah reference refers, in the alternative, to "probabilistic marking of IP packets" and "intentional ICMP trace-backs."

Moreover, Applicant notes the Examiner states, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the ICMP trace-back disclosed in Chuah with the marker/policer disclosed in McDysan, as modified by Ho and Yu above, in order to detect and block IP packets involved in DDOS attacks." Applicant notes the Examiner has not alleged any modification "by Ho and Yu above." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 13 and 32. Therefore, Applicant submits claims 13 and 32 are in condition for allowance.

The Examiner has rejected claims 14 and 33 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) and Yu et al. (United States Patent Application Publication US 2004/0010583 A1) as applied to claims 4 and 23 above, and further in view of Pan et al. (United States Patent 7,336,615). Applicant respectfully disagrees.

Regarding claims 14 and 33, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 14 and 33. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "applying interface groups to communication of ping packets." While the Examiner cites "(column 14, lines 48-55)" of the Pan reference, Applicant submits the Examiner's characterization that "Pan discloses assigning predetermined port numbers to LSP ping messages" teaches away from what the Examiner alleges teaches "interface groups" in claims from which claims 14 and 33 depend. Thus, Applicant submits the Examiner's alleged combination would be rendered inoperable.

Moreover, Applicant notes the Examiner states, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine ping message port assignment disclosed in Pan with the marker/policer disclosed in McDysan, as modified by Ho and Yu above, in order to automatically detect the status of a label switched path." Applicant notes the Examiner has not alleged any modification "by Ho and Yu above." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 14 and 33. Therefore, Applicant submits claims 14 and 33 are in condition for allowance.

The Examiner has rejected claims 15 and 34 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent

Publication No. US 2003/0152078 A1) and Yu et al. (United States Patent Application Publication US 2004/0010583 A1) as applied to claims 4 and 23 above, and further in view of Fotedar et al. (United States Patent Application Publication 2004/0085965 A1). Applicant respectfully disagrees.

Regarding claims 15 and 34, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 15 and 34. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "applying interface groups to communication of traceroute packets." While the Examiner cites "(paragraph 0011)" of the Fotedar reference, Applicant submits the Examiner's characterization that "Fotedar discloses assignment of traceroute packets to a virtual router address indicative of a loopback interface" teaches away from what the Examiner alleges teaches "interface groups" in claims from which claims 15 and 34 depend. Thus, Applicant submits the Examiner's alleged combination would be rendered inoperable. In the Examiner's Response to Arguments, the Examiner states, "Applicant states that the cited combinations would be inoperable, but fails to provide further evidence." Applicant notes Applicant has cited the Examiner's characterization of the cited art with respect to claims 15 and 34 vis-à-vis the Examiner's characterization of the cited art with respect to claims from which claims 15 and 34 depend and has alleged such characterizations cannot be reconciled, and thus they teach away, rendering the Examiner's alleged combination inoperable.

Applicant notes the Examiner states, "It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the traceroute packet assignment disclosed in Fotedar with the marker/policer disclosed in McDysan, as modified by Ho and Yu above, in order to enable direct communications between a virtual router and a virtual address, without having to know a physical address." Applicant notes the Examiner has not alleged any modification "by Ho and Yu above." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 15 and 34. Therefore, Applicant submits claims 15 and 34 are in condition for allowance.

The Examiner has rejected claims 18 and 37 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) as applied to claims 1 and 20 above, and further in view of Johansson (United States Patent 6,061,330). Applicant respectfully disagrees.

Regarding claims 18 and 37, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 18 and 37. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "receiving unmarked control packets using rate-limited queues." Applicant notes the Examiner cites "(Figure 1, 116; Figure 4, 410)" of the Johansson reference. Applicant sees no "Figure 4" in the Johansson reference, so Applicant assumes the Examiner is referring to "Figure 4a, 410." Applicant submits the Examiner mischaracterizes the teachings of the Johansson reference. As an example, Applicant notes the Johansson reference states, in col. 9, lines 41-43, "The flow diagram of FIG. 4a illustrates steps for calculating aggregated offered rate γ_{tot} and queue length at the output device 224." Applicant submits "the output device 224" teaches away from "receiving unmarked control packets using rate-limited queues." Moreover, Applicant submits the Examiner has not alleged any relationship between "the output device 224" and "Figure 1, 116." Thus, Applicant submits the Examiner has not made a *prima facie* showing of obviousness with respect to claims 18 and 37. Therefore, Applicant submits claims 18 and 37 are in condition for allowance.

The Examiner has rejected claims 19 and 38 under 35 U.S.C. § 103(a) as allegedly being unpatentable over McDysan et al. (U.S. Patent No. 7,046,680) in view of Henderson et al. (U.S. Patent Publication No. US 2003/0152078 A1) as applied to claims 1 and 20 above, and further in view of Hussey et al. (United States Patent Application Publication 2001/0049744 A1). Applicant respectfully disagrees.


Regarding claims 19 and 38, Applicant submits the cited portions of the cited references fail to render obvious the subject matter of claims 19 and 38. As an example, Applicant submits the cited portions of the cited references do not disclose or suggest "processing the received packets at a line rate." While the Examiner cites "(paragraph 0050)" of the Hussey reference, Applicant notes "(paragraph 0050)" of the Hussey reference does not specifically recite "a processor pool aggregation technique wherein a received packet data stream is capable of being processed at a line rate," but instead states "...receives a packet data stream via the communication network 110 at a line rate that might otherwise overwhelm the processing capabilities of the NIC 160 and result in dropped packets and reduced quality of service." Moreover, Applicant submits the Examiner has not presented any evidence that the purported combination of the teachings of Hussey and those of the other cited references would not also "otherwise overwhelm the processing capabilities of the NIC 160 and result

in dropped packets and reduced quality of service." Accordingly, Applicant submits the Examiner's purported combination has not been shown to disclose or suggest the subject matter of claims 19 and 38. In the Examiner's Response to Arguments, the Examiner states, "Examiner notes that the passage of the Hussey reference cited by Applicant refers to the benefit disclosed in Hussey, rather than an admitted deficiency of the prior art." Applicant submits Hussey appears, in such passage, to be reciting a critical limitation that the Examiner presents no evidence would be met if supposed teachings of such passage were combined with the supposed teachings of the other cited references. Therefore, Applicant submits claims 19 and 38 are in condition for allowance.

In conclusion, Applicant has overcome all of the Office's rejections, and early notice of allowance to this effect is earnestly solicited. If, for any reason, the Office is unable to allow the Application on the next Office Action, and believes a telephone interview would be helpful, the Examiner is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

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